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Branch or Stock.

Waccawai, same as Ackawoi.

Wapiana..... Wapiana,

Warrau..... Warrau.

Woruma, hybrids.

Woyowai, only the name is known.

Zurumutas, sub-tribe of MacusiCarib.

To give a faint conception of the rich veins of ethnologic lore in this volume it would be necessary to quote many pages. We have so few collaborators in South America, that Mr. Thurn is to be congratulated for his energy and wise use of his time.

THE CATLIN COLLECTION.—The editor of these notes had the painful pleasure of unpacking the last of George Catlin's magnificent collection a few days ago. Among a multitude of articles of dress, industry and ornament, many are in good state of preservation, having the merit of being collected forty years ago and taken from the hands of those who made and used them. But, sad to tell, time, neglect and insects have played dreadful havoc with many beautiful and rare things. It was hard to realize that so few years could work such changes, yet such is the case, and many more fine collections will go the same path.

MICROSCOPY AND HISTOLOGY.¹

METHODS OF IMBEDDING.²—Dr. Blochmann reviews the various methods of imbedding, describing in detail those that have come into general use, and pointing out the advantages and disadvantages of each.

In every method of imbedding the principle is the same, namely, to saturate objects with substances which not only fill out the larger internal cavities, but which also penetrate the tissues themselves, rendering them (after cooling) sufficiently hard for the process of sectioning.

Glycerine and Gelatine.—

Gelatine 1 part.

Distilled water..... 6 parts.

Glycerine 7 parts.

For preservation a little carbolic acid (1 gram for 100 grams of the mixture) should be added. Objects are transferred directly from water to the melted mixture; and, after complete saturation, imbedded in paper boxes. After cooling the objects thus imbedded are hardened in alcohol, then sectioned and mounted in glycerine.³

Schiettefferdecker's method of imbedding in Celloidine.⁴—Celloidine

¹ Edited by Dr. C. O. WHITMAN, Mus. Comparative Zoology, Cambridge, Mass.

² F. Blochmann. "Ueber Einbettungsmethoden." *Zeitschr. f. wiss. Mikr.*, I, H. 2, p. 218, 1884.

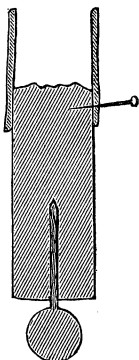
³ This method is recommended by Kaiser. *Botan. Centralbl.*, I p. 25, 1880.

⁴ *Arch. f. Anat. u. Phys.*, I Abth., p. 199, 1882.

is prepared in plates, and may be obtained from Wittich & Benkendorf, Chaussee Strasse 19, Berlin N.

Schiefferdecker uses two solutions, one of a syrupy consistency, the other somewhat thinner. The celloidine plate is cut into small pieces and dissolved in absolute alcohol and ether (in equal parts). Objects are transferred from absolute alcohol,¹ first to the thinner solution, then to the thicker. After remaining a few hours (or days, according to the character of the object) in the latter they are imbedded in paper boxes. As soon as a hardened film forms on the solution in the box, the whole is placed in 82 per cent alcohol for 24-48 hours, and thus rendered sufficiently hard for cutting.

Blochmann recommends imbedding on a cork rather than in a paper box, as less celloidine is required, and as the cork is held more firmly in the holder. One end of the cork is made rough and surrounded by a strip of paper, which is made fast by a pin, as shown in the figure. The roughened surface of the cork is wet with absolute alcohol and then the object imbedded in the usual manner. In order that this small box may sink in alcohol, in which it is placed for hardening the celloidine, it may be weighted with a small lead ball fastened to the cork by a needle (see figure).



In cutting, the knife is kept wet with alcohol (70 per cent). The sections may be placed in water or in alcohol, and afterwards stained with carmine or hæmatoxylin, in which the celloidine is only a little or not at all, stained. Aniline dyes color the celloidine, and therefore should not be used.

The sections can be mounted in glycerine or in balsam; but in the latter case they must be anhydrous with 95 per cent alcohol, as absolute alcohol dissolves the celloidine. They should be clarified in bergamot oil or origanum oil (clove oil dissolves the celloidine).

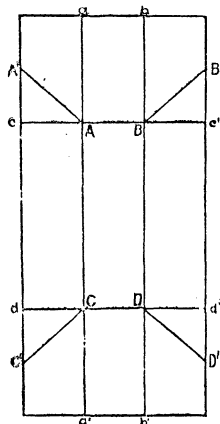
Objects imbedded in celloidine can be preserved, ready for cutting, for a long time in 70-80 per cent alcohol.

Imbedding in Paraffine.—The object is transferred from absolute alcohol to chloroform, and left till the alcohol has been entirely replaced; it is next placed in a shallow vessel with a small quantity of chloroform, and enough paraffine added, in fine pieces, to cover it after the chloroform has evaporated. The vessel is then exposed to a temperature which corresponds to the melting point of the paraffine employed. The paraffine melts and the chloroform evaporates, so that the object is brought very gradually into pure melted paraffine. In this way the object becomes *completely* saturated with the paraffine.

¹ If the objects are penetrated with difficulty, they may be transferred from absolute alcohol to ether, then to the celloidine solutions.

It is essential that the mixture be kept at the proper temperature until *all* the chloroform has evaporated. A simple test is to place a hot wire in the paraffine, if no bubbles arise, it is safe to conclude that the chloroform has entirely escaped.

After evaporation of the chloroform, the object may be placed in any desired position, and the paraffine allowed to cool. After cooling the object can be cut out and fixed to a larger block of paraffine fitted for the holder of the microtome.

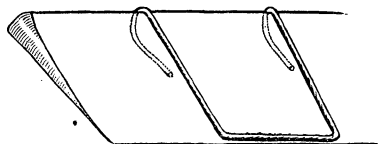


Boxes for imbedding may be made of rectangular pieces of paper of the thickness of postal cards in the following manner: The paper is first broken in the lines $a a'$ and $b b'$, then $c c'$ and $d d'$ (by bending always towards the same side). Then in every corner a break ($A A'$, $B B'$, $C C'$, $D D'$) is made by bringing $A c$ and $A a$ together. The four sides of the box are next bent up and the corners at the same time turned outward and back behind the ends $A B a b$ and $C D a' b'$. Finally the

upper edge of these ends is bent down over the corners.

Bubbles around the object may be removed by means of a heated wire.

A SIMPLE SECTION-SMOOTHER.¹—Led by a suggestion of P. Francotte, the writer devised a simple form of section-smoother which can readily be made by any one and which fairly answers the purpose for which it was intended. A piece of iron wire is



bent in the manner shown in the cut, so that the two ends will form a spring clip grasping the back of the knife. The middle portion is so fixed that it will be parallel with the edge of the knife and at

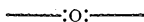
a distance of about a hundredth of an inch from it. For this purpose the writer has found an ordinary hairpin, deprived of its lacquer, about the right size.

In cutting, the section passes between the wire and the blade and all tendency to curl is prevented. This form of smoother is applicable to the knife when used in any form of sledge microtome, or when cutting free-hand; but for use with the Sterling (well) microtome it is evidently ill adapted, for the ends which come underneath the blade would interfere with the work. The form of smoother recently described by Drs. Gage and Smith embraces the same principle but is more complicated.

¹ J. S. Kingsley, Science Record, II, No. 5, p. 112, March 15, 1884.

ON THE USE OF VASELINE TO PREVENT THE LOSS OF ALCOHOL FROM SPECIMEN JARS.¹—The petroleum preparation known as vaseline is known to be practically unaffected by ordinary temperatures and by most substances. In the *Journal of the Chemical Society*, July, 1882, p. 786, it is said to be "sparingly soluble in cold strong alcohol, and completely in hot, but separates out on cooling." After trying various substances, wax, paraffine, oil and glycerine with but partial success, the use of vaseline was suggested by the two authors independently and nearly at the same time. The experiments tried this spring indicate that, during three months, at ordinary spring and summer temperatures, there is no appreciable loss of ninety-five per cent alcohol from glass vials or jars, whether upright or inverted or on the side, provided corks are anointed on the bottom as well as on the side, provided ground glass stoppers are anointed and firmly inserted, and provided the rubber rings of fruit jars and the specimen jars made by Whitall, Tatum & Co., are anointed on both sides and the covers well screwed down.

We have also used the vaseline for preventing the loss of other liquids, excepting chloroform and spirits of turpentine; as a lubricator of drawers, and to prevent the sticking of the covers or stoppers of cement vials; and for the prevention of rust upon steel instruments.



SCIENTIFIC NEWS.

— Prizes given by the French Academy (continued from p. 752, July No.).—The grand prize in geology was given to M. Fontannes for his studies of the Tertiary basin of the south-east of France, carried on by him with great ardor for ten years. Thanks to him the newer formations of the valley of the Rhone are now among the best known regions.

A second prize of 2000 francs fell to M. Peron for his "Geological Description of Algiers."

The "Prix Barbier," for an important discovery in surgical, medical or pharmaceutical science, was allotted to M. J. Chatin for his researches upon the trichina. His work is a complete monograph, reviewing all previous published works upon the worm and adding many new facts.

In botany the "Prix Desmazieres" was awarded to the memoir of MM. G. Bonnier and L. Mangin, entitled "Researches on the respiration and transpiration of Fungi." This work marks a great advance both in the special physiology of fungi and in general physiology.

An "encouragement" of 500 francs was accorded to M. Klein for his memoirs on "Vampyrella" (which he places near the *Myxomycetes*) and on the "Crystalloids of marine Algæ."

¹ Wilder and Gage. *Proc. A. A. A. S.*, xxxii, p. 318.